

# Laparoscopic Sterilization at an Outpatient Clinic

MARY FRANCES TURNER-BONK, MS,  
A. JEFFERSON PENFIELD, MD,  
and DANIEL L. DRISCOLL, PhD

*Physical and psychological reactions of the first 200 women who received sterilization operations at the Planned Parenthood Center of Syracuse, N.Y.*

RECENT BIRTH CONTROL TECHNOLOGY has contributed to a new freedom for men and women and has led to an expectation of "complete and unobtrusive fertility control" (1). This expectation is one reason for the increasing interest in contraceptive sterilization. In fact, by 1973, 29 percent of the U.S. couples who did not wish to have more children had chosen sterilization for the husband or the wife (2).

Technical advances also have led to dramatic improvements in the ability to provide sterilization for women. In June 1972, the Planned Parenthood Center of Syracuse initiated an outpatient sterilization program for women. By March 1976, laparoscopic sterilization had been performed under local anesthesia on 1,200 women in an out-of-hospital setting. Reports on these patients have been published (3,4).

Since medical and helping personnel and potential patients have concerns about the suitability of sterilization procedures, as well as the physical and psychological effects of sterilization, we analyzed these factors for the first 200 patients who received operations at the center. We also studied the demographic characteristics and fertility history of this population.

## Study Design

Data for the study were obtained from all 200 patients' charts and from responses to a mailed questionnaire. The questionnaires were mailed in March 1974, 9 to 22 months after the surgery had been performed.

The charts provided information on date of birth, income, size of household, marital status, welfare status, schooling, race, contraceptive and fertility experience, medical history, and date of surgery. Answers to the questionnaire provided (a) further demographic information, (b) the patients' prior

experience with various contraceptive methods and the success or lack of it, (c) the decision-making process, (d) information regarding the patients' recall of the surgical procedure, (e) recovery experiences, and (f) the patients' perceptions of emotional and sexual changes since surgery. The questionnaire also asked the patient if she had been adequately prepared for surgery, if she would recommend the procedure to anyone else, and if it had made a difference in her life.

The information obtained from the charts and the questionnaires was coded, keypunched, and analyzed by computer. Descriptive statistics, such as frequencies and percentages, were used in analyzing the results.

## Results

A total of 196 questionnaires were mailed; 142 (72 percent) were answered and returned, 5 (3 percent) were returned as "undeliverable," and 49 (25 percent) were not returned.

---

□ Ms. Turner-Bonk was a graduate student in Child and Family Studies, College for Human Development, Syracuse University, at the time of this study. Dr. Penfield, clinical associate professor, Department of Obstetrics and Gynecology, Upstate Medical Center, and in private practice in Syracuse, was medical director of the Planned Parenthood Center of Syracuse, Inc., at the time of this study. Dr. Driscoll is associate professor of statistics at the State University of New York (SUNY) at Cortland.

Tearsheet requests to Mary Frances Turner-Bonk, Research Associate, Planned Parenthood Center of Syracuse, Inc., 1120 E. Genesee St., Syracuse, N.Y. 13210.

**Table 1. Characteristics of 200 women who had laparoscopic sterilizations at an outpatient clinic<sup>1</sup>**

Characteristics	Total		Responders		Nonresponders	
	Number	Percent	Number	Percent	Number	Percent
<b>Age:</b>						
20 .....	1	0.5	1	0.7	0	0
21-25 .....	17	8.5	15	10.6	2	3.4
26-30 .....	53	26.6	38	27.0	15	25.9
31-35 .....	64	32.2	41	29.1	23	39.7
36-40 .....	41	20.6	29	20.6	12	20.7
41-45 .....	21	10.6	15	10.6	6	10.3
46-50 .....	2	1.0	2	1.4	0	0
<b>Total .....</b>	<b>199</b>	<b>..</b>	<b>141</b>	<b>..</b>	<b>58</b>	<b>..</b>
<b>Years of schooling:</b>						
Less than 12 ....	65	32.5	42	29.6	23	39.7
12 .....	84	42.0	60	42.3	24	41.4
13-15 .....	29	14.5	22	15.5	7	12.0
16 .....	14	7.0	10	7.0	4	6.9
More than 16 ...	8	4.0	8	5.6	0	0
<b>Total .....</b>	<b>200</b>	<b>..</b>	<b>142</b>	<b>..</b>	<b>58</b>	<b>..</b>
<b>Marital status:</b>						
Married .....	144	72.4	105	74.0	39	68.4
Separated .....	27	13.6	17	11.9	10	17.5
Divorced .....	17	8.5	13	9.2	4	7.0
Single .....	7	3.5	4	2.8	3	5.3
Other .....	4	2.0	3	2.1	1	1.8
<b>Total .....</b>	<b>199</b>	<b>..</b>	<b>142</b>	<b>..</b>	<b>57</b>	<b>..</b>
<b>Number of living children:<sup>2</sup></b>						
0 .....	7	3.5	5	3.5	2	3.5
1-2 .....	59	29.5	50	35.2	9	15.5
3-4 .....	92	46.0	62	43.7	30	51.7
5-6 .....	32	16.0	21	14.8	11	19.0
7 or more .....	10	5.0	4	2.8	6	10.3
<b>Total .....</b>	<b>200</b>	<b>..</b>	<b>142</b>	<b>..</b>	<b>58</b>	<b>..</b>
<b>Income:</b>						
Less than \$3,000.	13	6.6	10	7.1	3	5.3
\$3,001-\$4,500 ...	43	21.9	28	19.9	15	26.7
\$4,501-\$6,500 ...	41	20.8	32	22.7	9	16.1
\$6,501-\$8,000 ...	27	13.7	17	12.0	10	17.9
\$8,001-\$10,000 ..	27	13.7	18	12.8	9	16.1
More than \$10,000	46	23.3	36	25.5	10	17.9
<b>Total .....</b>	<b>197</b>	<b>..</b>	<b>141</b>	<b>..</b>	<b>56</b>	<b>..</b>
<b>Religion:<sup>3</sup></b>						
Protestant .....	..	..	75	53.2	..	..
Catholic .....	..	..	49	34.8	..	..
Jewish .....	..	..	1	0.7	..	..
Other .....	..	..	9	6.4	..	..
None .....	..	..	7	4.9	..	..
<b>Total .....</b>	<b>..</b>	<b>..</b>	<b>141</b>	<b>..</b>	<b>..</b>	<b>..</b>
<b>Welfare .....</b>	<b>45</b>	<b>22.5</b>	<b>29</b>	<b>20.4</b>	<b>16</b>	<b>27.6</b>
<b>Medicaid .....</b>	<b>51</b>	<b>25.5</b>	<b>31</b>	<b>21.8</b>	<b>20</b>	<b>34.5</b>

<sup>1</sup>Data obtained from patients' charts and responses to a mailed questionnaire.

<sup>2</sup>Mean age of youngest child was 5.0 years; ages of children ranged from under 1 to 18 years.

<sup>3</sup>Data not available for nonresponders.

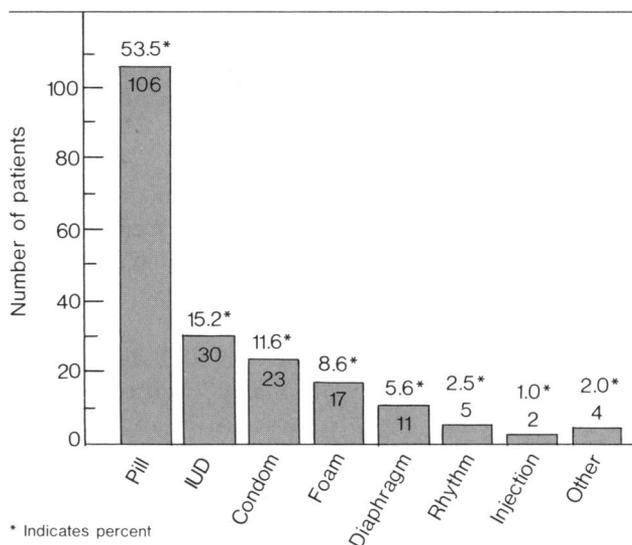
**Demographic characteristics.** Demographic information is presented in table 1. The average age of the study group was 33 years, with a range of 20-47 years. The mean number of years of marriage was reported as 12.2 by the 105 respondents who were married at the time of surgery. The mean number of living children was 3.4, and the mean age of the youngest child at the time of surgery was 5 years, with a range from under 1 to 18 years. Of the 200 patients having the surgery, 98 percent were white.

**Contraceptive and pregnancy data.** The charts indicated that all 200 women had used contraception at some time. At the time of surgery, 164 (82 percent) were using some form of contraception—the pill by 54 percent, the IUD by 15 percent, the condom by 12 percent, and other methods by 20 percent (fig. 1). Questionnaire responses indicated that 54 percent of the women who were using contraception at the time of the surgery were dissatisfied with their methods.

Information in the charts indicated that 32 percent of the patients had experienced a medical problem associated with contraception (such as bleeding with an IUD or serious side effects with the pill); 13 percent had other medical problems that might be aggravated by a future pregnancy (such as toxemia or severe phlebitis during pregnancy); and 10 percent had both. In sum, 55 percent of the sample had an indication of a medical problem associated with contraception or pregnancy, or both.

The 200 patients had had a total of 816 pregnancies; 84 percent of these resulted in live births

**Figure 1. Last method of contraception used by 198 women**



and 16 percent in pregnancy losses. In the latter category, 40 patients had 57 spontaneous abortions, 38 had 46 induced abortions, 14 had 22 abortions—type unspecified, and each of 9 patients had had 1 still-born child. (These figures include nine patients who had operative abortions immediately before laparoscopic sterilization.)

A total of 279 unplanned pregnancies had been experienced by 111 or 78 percent of the respondents (fig. 2); 80 of these patients said they had been "really upset" about a total of 141 pregnancies. Thus, more than half of the women answering the questionnaire (56 percent) had had at least one pregnancy about which they were really upset.

Among all 200 patients in the study group, the average number of pregnancies was 4, and about 5 of 6 of their pregnancies resulted in live births. Among the 142 patients who returned the questionnaires, 1 of 3 pregnancies had been unplanned; the patients reported being really upset about more than half of these unplanned pregnancies. The patients

were not asked whether these unplanned pregnancies ended in live births or abortions.

**Decision making.** The questionnaire responses indicated that almost half of the respondents had heard of laparoscopic sterilization from a medical source, one-third from a friend or family member, and one-fourth had read about it in a magazine or newspaper.

The primary reasons given by 138 women in answer to the question: "What were your reasons for having the lap? (Be specific.);" were as follows:

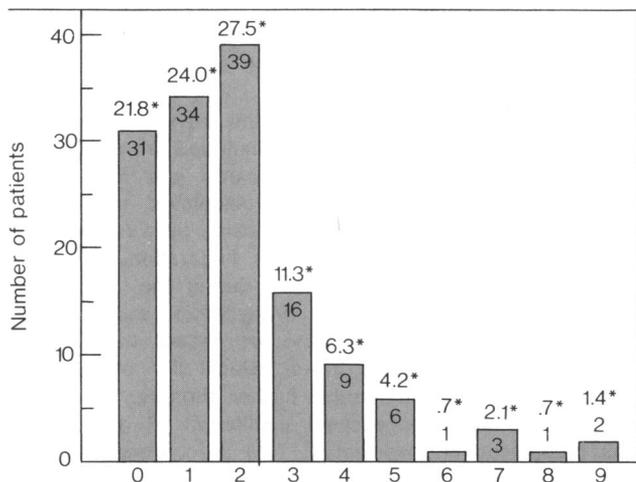
Reasons given	Number	Percent
Permanent birth control .....	49	35.5
Enough children .....	42	30.4
Concern about pill .....	12	8.7
Medical problems .....	12	8.7
Elimination of anxiety .....	8	5.8
Patient's age .....	7	5.1
Financial .....	4	2.9
IUD problems .....	3	2.2
Husband's condition .....	1	0.7

In deciding to have surgery, 63 percent had made the decision by themselves. The time required to make the decision was less than 6 months for 61 percent, 6 months to 1 year for 18 percent, and more than 1 year for 21 percent. Younger women took longer to make the decision than did the older women.

**The procedure.** The experience of pain was remembered by 36 percent as "a lot," by 58 percent as "a little," and by 6 percent as "none." Of the 111 patients who answered the question about the kind of pain they had experienced, 42 percent had felt the pressure of the gas, 33 percent had felt the fulguration of the tubes, and 17 percent had felt both.

As to whether surgery was as expected, 68 percent said it was and 32 percent said it was not. Of the latter, 28 experienced more pain than they expected, 8 had assorted surprises (not being asleep or incision smaller or higher or longer than expected, for example), and 8 felt that the surgery had gone better than they expected. An overwhelming 99 percent in-

Figure 2. Number of unplanned pregnancies among 142 patients



\* Indicates percent

Table 2. Postsurgery experience—emotional and sexual response patterns

Perception of—	Better or more		Same		Worse or less	
	Number	Percent	Number	Percent	Number	Percent
Emotional health .....	76	54.3	57	40.7	7	5.0
Enjoyment of sex .....	83	59.3	54	38.6	3	2.1
Partner's enjoyment of sex .....	59	44.0	70	52.3	5	3.7
Frequency of sex .....	55	39.3	71	50.7	14	10.0
Relationship to partner .....	64	47.8	65	48.5	5	3.7
Relationship to family .....	46	32.6	95	67.4	0	0

licated that their questions had been answered beforehand.

**Recovery.** After surgery, regular physical activity was begun by 64 percent of the respondents in 1 to 3 days, by 28 percent in 4 to 7 days, and by 8 percent in more than 1 week. Physical health was perceived as better by 16 percent, as the same by 81 percent, and as worse by 3 percent. None thought it was worse as a result of the surgery. Regular sexual activity was begun by 11 percent in 1 to 3 days after surgery, by 32 percent in 4 to 7 days, by 42 percent in 1 to 2 weeks, and by 15 percent after 2 weeks.

**Perception of emotional and sexual changes.** Answers to questions dealing with emotional and sexual responses after the surgery are summarized in table 2. These questions were:

- What is your emotional health since the lap? better/same/worse
- Since the lap, do you enjoy sexual relations more/same/less
- Since the lap, does your partner enjoy sexual relations more/same/less
- Since the lap, do you have sexual relations more often/as often/less often
- What is your relationship to your partner now? better/same/worse
- What is your relationship now to the rest of your family? better/same/worse

The findings worth noting in table 2 are that more than half of the study sample reported that their emotional health was better since the surgery, and well over half reported a greater enjoyment of sex. Also, just under half reported that their relationship to their partners was better. Interestingly, in light of the 60 percent who enjoyed sex more, only 44 percent perceived their partners as enjoying it more, and only 40 percent were having sexual activity more often.

**Patient satisfaction.** A number of questions dealt with whether the procedure had been satisfactory for the patient. As to whether they would have preferred to be asleep in a hospital operating room, 68 percent said they would not. More than 96 percent of the patients had experienced no regrets following surgery, and less than 4 percent had had some regrets. Sixty-six percent of the patients wished the procedure had been performed sooner. As to recommending the procedure, 97 percent said they would, and 90 percent had actually done so.

Of all the respondents, 75 percent said that the surgery had made a difference in their lives. The primary responses of 104 patients to this question were as follows:

<i>Difference in lives</i>	<i>Number</i>	<i>Percent</i>
No fear of pregnancy .....	57	54.8
More relaxed .....	19	18.3
Better sex .....	9	8.7
Enjoy family more .....	7	6.7
No worry about pills .....	4	3.8
Feel better .....	3	2.9
Medical problems alleviated .....	2	1.9
Feel some regret .....	3	2.9

Representative of the responses of those who felt that the surgery had made a difference were: "Mentally, physically, emotionally, financially! I believe it's one of the best decisions I ever made! I am a lot happier with life, my family and my husband!" "More relaxed. I enjoy planning for the future without the fear of pregnancy. My whole family has benefited from the laparoscopy since I do not worry two weeks out of four whether or not I'm pregnant."

---

### Clinical Details

In the performance of the laparoscopic sterilizations, the Wolf operating laparoscope was used through a single infraumbilical incision following instillation of gas. For the first 200 women reported here, carbon dioxide gas was used, and the tubes were bathed with 1 percent lidocaine hydrochloride before fulguration by means of the grasping forceps. The tubes were not severed. Preoperative medications included atropine 0.3 mg IM and fentanyl citrate (Sublimaze) 0.1 mg IV.

Two important improvements in the technique used for the subsequent 900 patients not included in this report were (a) substitution of nitrous oxide gas for carbon dioxide, thus eliminating peritoneal discomfort and (b) the tubal infiltration with 1 percent xylocaine by a long-needle cannula, thus preventing pain from fulguration.

Four women had complications during the procedure. One patient had postoperative bradycardia, and she was kept at the clinic all day. Another patient had ½ cm superficial singeing of the bowel, which did not result in morbidity and did not require further therapy. The other two women had preperitoneal instillation of gas, which was recognized and corrected. Two procedures were incomplete (1.0 percent): one because of excess weight and the other because of adhesions.

Among the first 200 patients, 3 experienced recanalization and subsequent intrauterine pregnancies. The results of an analysis of these cases suggested that the probable reason for recanalization was inadequate fulguration. For the subsequent patients, a grasping forceps with longer jaws (5 mm) was used, and each tube was thoroughly fulgurated in two or three locations.

Two other patients were discovered to have subsequent pregnancies—one was already pregnant at the time of the procedure, and the other developed a proximal tubal fistula with resultant ectopic pregnancy. Among the next 562 patients who had laparoscopic sterilizations at the Planned Parenthood Center from 1973 to 1976, 3 patients have reported subsequent pregnancies.

---

**The nonresponders.** A comparison of the responders (72 percent) with the nonresponders (28 percent) to the questionnaire shows that the differences in mean ages of the responders (32.9 years) and the nonresponders (33.4 years) were not significant, nor were differences in income level (table 1). There was also little difference in marital status between the two groups of women.

However, 40 percent of the nonresponders had less than 12 years of education, compared with 30 percent of the responders. Larger families were more prevalent among the nonresponders—81 percent had 3 or more children, compared with 61 percent of the responders. The nonresponders also had younger children—54.5 percent had children 3 years or under, compared with 38.8 percent of the responders. Finally, a larger percentage of nonresponders than responders were receiving welfare and Medicaid.

### Discussion

The question at the heart of any sterilization operation is whether the procedure has been satisfactory for the patient. In this study we found that 54 percent of the patients felt that their emotional health had improved since the surgery, almost 60 percent enjoyed sexual activity more, 66 percent wished that they had had the surgery earlier, and 97 percent said

that they would recommend the operation to a friend. More than 96 percent had no regrets. Thus, this outpatient sterilization procedure was clearly approved by the patients for themselves as well as for others.

Contraceptive sterilization, for men or women, is the most effective solution to the period of risk of perhaps 20 years that many couples face after they have had all the children they want. It also provides the kind of fertility control that couples have come to expect, without the concerns occasioned by the pill and the IUD.

\* \* \*

NOTE: A copy of the questionnaire may be obtained from Ms. Turner-Bonk.

### References

1. Bumpass, L.: The increasing acceptance of sterilization in the U.S. Advances in voluntary sterilization. *In Proceedings of the 2nd International Conference, Geneva, Switzerland, February 25–March 1, 1973.* American Elsevier Publishing Company, Inc., New York, 1974, pp. 104–111.
2. Digest. *Fam Plann Perspect* 7: 113, May/June 1975.
3. Penfield, A. J.: Laparoscopic sterilization under local anesthesia—340 cases. *Am J Obstet Gynecol* 119: 733–736, July 15, 1974.
4. Penfield, A. J.: Laparoscopic sterilization under local anesthesia—1200 cases. *Obstet Gynecol* 49: 725–727, June 1977.

## SYNOPSIS

TURNER-BONK, MARY FRANCES (Planned Parenthood Center of Syracuse, Inc.), PENFIELD, A. JEFFERSON, and DRISCOLL, DANIEL L.: *Laparoscopic sterilization at an outpatient clinic. Physical and psychological reactions of the first 200 women who received sterilization operations at the Planned Parenthood Center of Syracuse, N.Y. Public Health Reports, Vol. 93, January–February 1978, pp. 55–59.*

This study concerns the first 200 patients to be accepted for laparoscopic sterilization on an outpatient basis at the Planned Parenthood Center of Syracuse. Chart information was available for all 200 patients. Questionnaires were mailed to 196 of these patients and 142 or 72 percent were returned, thus providing important additional information on the patients' experiences during and after surgery.

For the total study group, the average age at surgery was 33 years, 72 percent were married, 46 percent had 3 or 4 children, 98 percent were white, two-thirds had high school or higher education, and 25 percent were receiving Medicaid. The mean age of the youngest child was 5 years, with a range from under 1 to 18 years.

The patients' charts showed that 55 percent had a medical problem associated with contraception or pregnancy, or both, and that 82 percent were using some form of contraception at the time of the surgery. The returned questionnaires indicated that 54 percent of the women using contraception at the time of the surgery were dissatisfied with their method. Also, 56 percent of these patients had had at least one pregnancy about which they were "really upset." The primary reason

given by two-thirds of the questionnaire respondents for having the surgery was either that they wanted a permanent method of birth control or that they had enough children.

Of the 142 questionnaire respondents, 64 percent indicated that they had returned to regular physical activity 1 to 3 days after surgery, and 43 percent said that they resumed regular sexual activity by the end of the first week. Among these patients, 54 percent said that their emotional health was better after surgery, almost 60 percent said that they enjoyed sex more, 47 percent said that their relationship with their partners was better, and 32 percent said that their relationship with their families was better. Finally, 66 percent of the respondents wished that they had had the surgery sooner, and more than 96 percent had no regrets about having had the surgery.